Date: Tuesday, 24/02/2009 7:37:13 AM
User: Jean-Luc Menard

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	**Drawing Name**	: BRACKET ASSEMBLY
Job Number	: 46036		
Estimate Number	: 10279		
P.O. Number	:	**Part Number**	: D3121143
This Issue	: 24/02/2009 **S.O. No.** :	**Drawing Number**	: D3121 REV E
Prsht Rev.	: NC	**Project Number**	: N/A
First Issue	: / / **Type** : MACHINED PARTS	**Drawing Revision**	: E
Previous Run	: 45085	**Material**	:
Written By	: 09.02.24	**Due Date**	: 03/03/2009 **Qty:** 10 **Um:** Each
Checked & Approved By	:		

Comment : Est Rev:Pick:A 04.02.18 New issue KJ/DS
Est Rev:B ECN 1060 07-11-12 DD verified by:EC
Est Rev:C New Dimensions for Blank Size 08-07-23 JLM
Verified By:EC

Additional Product

Job Number:

Seq. #:	Machine Or Operation:	Description :
1.0	M174B1250X02000	17-4 SS Bar 1.250 x 2.00

Comment: Qty.: 0.3864 f(s)/Unit Total : 3.8640 f(s)
Material: 17-4 SS Bar per AMS 5604/5643
(M17-4-B1.250x02.000)
Identify for D3121-113
Batch: M109850 JL 09/03/04

2.0	BAND SAW	BAND SAW

Comment: BAND SAW
Cut blanks: (1.250" x 2.000") 4.425" long JL 09/03/04

3.0	HAAS1	HAAS CNC VERTICAL MACHINING #1

Comment: HAAS CNC VERTICAL MACHINING #1

1-Machine D3121-113 as per Folio FA330 and Dwg D3121
Identify as D3121-113

2-Deburr

3-Scribe batch number mm 09/03/06 / JL 09/03/07

4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE

Comment: INSPECT PARTS AS THEY COME OFF MACHINE mm 09/03/06 / JL 09/03/07

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: D3121-143 **PAR #:** N/A **Fault Category:** Prod / Machined Part. **NCR:** (Yes) No **DQA:** D **Date:** 09/03/26

Resolution: Scrap **Disposition:** Scrap **QA: N/C Closed:** D **Date:** 09/03/26

NCR: 46036		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			
09.03.04	1	WRong Radius on part. Incorrect tool was placed in the machine. R.C: operator error.	05/1412	- Qty 1 part Scrap & destroyed. - Folio is clean for tools.	MMF 09/03/10	SB 09/03/09	05/1412	09.03.09.

NOTE: Date & initial all entries

Date: Tuesday, 24/02/2009 7:37:13 AM
User: Jean-Luc Menard

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** BRACKET ASSEMBLY

Job Number: 46036 **Part Number:** D3121143

Job Number:

Seq. #	Machine Or Operation:	Description :	
5.0	QC8	SECOND CHECK	SP 09/03/09
	Comment: SECOND CHECK		
6.0	D312121	Bolt	
	Comment: Qty.: 2.0000 Each(s)/Unit Total : 20.0000 Each(s) Pick: Qty Part Number Description Batch 2 D3121-21 Bolt 646032		09/03/18
7.0	D3121241	Bearing Assembly	
	Comment: Qty.: 2.0000 Each(s)/Unit Total : 20.0000 Each(s) Pick: Qty Part Number Description Batch 2 D3121-241 Bearing Ass 646031		09/03/18
8.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1	
	Comment: SMALL & MEDIUM FAB RESOURCE 1 Assemble D3121-143 as per Dwg D3121.		09/03/18 (10)
9.0	QC5	INSPECT WORK TO CURRENT STEP	
	Comment: INSPECT WORK TO CURRENT STEP		09/03/18 (XCO)
10.0	PACKAGING 1	PACKAGING RESOURCE #1	(10X)
	Comment: PACKAGING RESOURCE #1 Identify and Stock Location: 235A	9/3/20	SP
11.0	QC21	FINAL INSPECTION/W/O RELEASE	
	Comment: FINAL INSPECTION/W/O RELEASE		09/03/24
Job Completion			MF 09-03-23

Form: rprocess

DART AEROSPACE LTD		Work Order:	46036
Description: Bracket		Part Number:	D3121-113
Inspection Dwg: D3121	Rev: E		Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

[X] First Article [ ] Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.080	+/-0.010	.078	✓			
0.300	+/-0.010	.300	✓			
R0.375	+/-0.010	R.375	✓			
1.54	+/-0.030	1.54	✓			
0.350	+/-0.010	.349	✓			
R0.25	+/-0.030	R.250	✓			
Ø0.392	+0.002/-0.000	Ø.392	✓			
Ø0.201	+0.005/-0.000	Ø.202	✓			
2.540	+/-0.010	2.537	✓			
1.590	+/-0.010	1.587	✓			
0.160	+/-0.010	.158	✓			
0.400	+/-0.010	.395	✓			
1.220	+/-0.010	1.221	✓			
1.600	+/-0.010	1.600	✓			
3.80	+/-0.030	3.80	✓			
1.800	+/-0.010	1.800	✓			
R0.50	+/-0.030	R.50	✓			
0.130	+/-0.010	.128	✓			
3.41	+/-0.030	3.41	✓			
3.65	+/-0.030	3.65	✓			
2.24	+/-0.030	2.241	✓			
45°	+/-0.1°	45°	✓			
R0.25	+/-0.030	.250	✓			
3.97	+/-0.030	3.97	✓			
R0.38	+/-0.030	R.38	✓			
Ø0.392	+0.002/-0.000	Ø.392	✓			
Ø0.201	+0.005/-0.000	Ø.201	✓			
0.268	+/-0.010	.268	✓			
R0.260	+/-0.010	R.260	✓			
0.080	+/-0.010	.080	✓			
0.300	+/-0.010	.300	✓			
0.381	+/-0.010	.381	✓			
0.201	+/-0.010	.208	✓			
0.580	+/-0.010	.580	✓			

mwF 09/03/06

DART AEROSPACE LTD	Work Order:	46036
Description: Bracket	Part Number:	D3121-113
Inspection Dwg: D3121 Rev: E		Page 2 of 2

FIRST ARTICLE INSPECTION CHECKLIST

[X] First Article [ ] Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.400	+/-0.010	.401	✓			
100°	+/-0.1°	100°	✓			
0.032	+0.000/-0.010	.029	✓			

Measured by:	MWF
Date:	09/03/06

Audited by:	SF
Date:	09/03/09

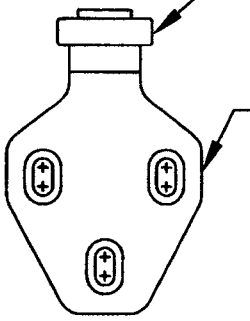
Prototype Approval:	N/A
Date:	N/A

Rev	Date	Change	Revised by	Approved
A	03.12.08	New Issue P/O D3121-143	KJ/RF	
B	04.05.05	Dimensions changed/re-arranged per Dwg revision	KJ/JLM	
C	06.06.14	Dwg Rev. updated	KJ/JLM	
D	08.01.16	Dimensions updated per Dwg Rev. E	KJ/EC/DD	

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D3121 — REV. E — SHEET 1 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY — SCALE 1:2

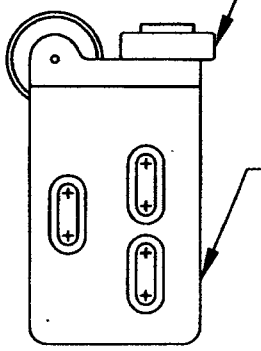
A	02.04.15	NEW ISSUE
B	03.01.16	ADD RIDGES; ADD MAT'L PROP; FIX P/N ADD −141/−143/−144/−145/−146
C	04.02.17	ADD CLEARANCE; USE −241 BEARING
D	06.05.17	D3121−25 CAP WAS 1.024, NOW 1.000
E	07.11.07	ADD TOLERANCE TO 0.032 (DETAIL B)

RELEASED
07.11.07

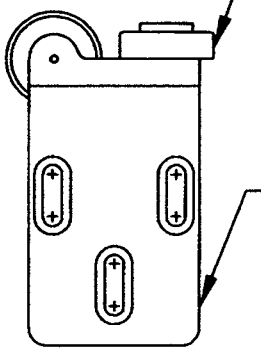


D3121−041 BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30−23000−33)

w/o 46036



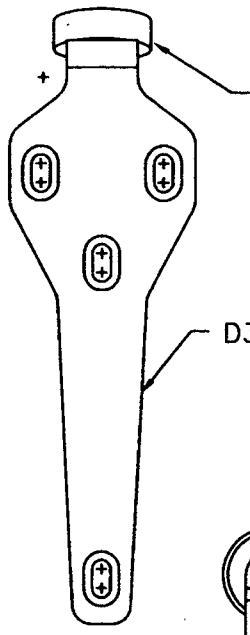
D3121−043 (SHOWN) / D3121−044 (OPPOSITE) BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30−23000−37/−38)



D3121−045 (SHOWN) / D3121−046 (OPPOSITE) BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30−23000−35/−36)

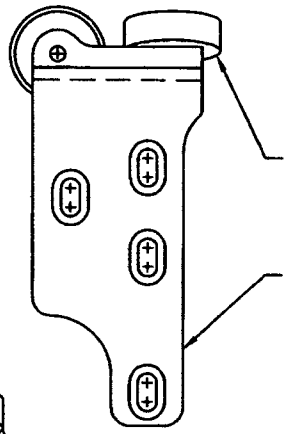
DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 2 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

w/046036

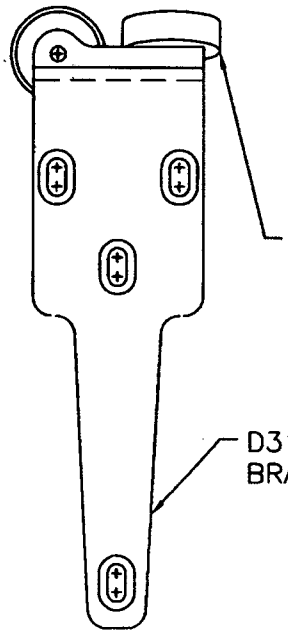


D3121-141 BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30-23001-01)

RELEASED
07.11.07



D3121-143 (SHOWN) / D3121-144 (OPPOSITE) BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30-23000-03/-04)

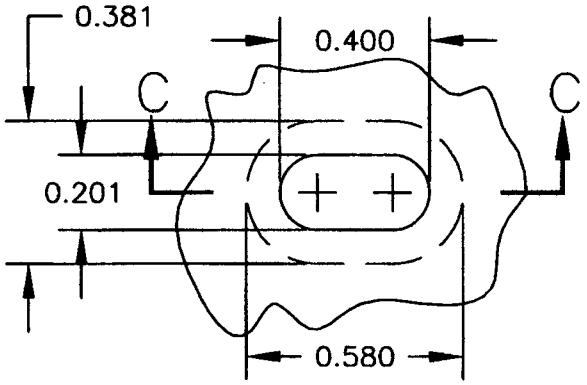


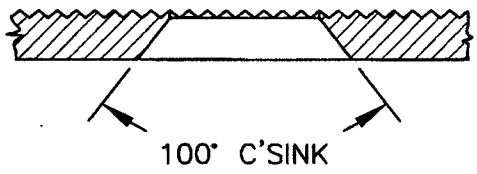
D3121-145 (SHOWN) / D3121-146 (OPPOSITE) BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30-23000-05/-06)

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 3 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:1

w/o 46036

DETAIL A:
SLOT DETAIL
SCALE 2:1
VIEW ROTATED

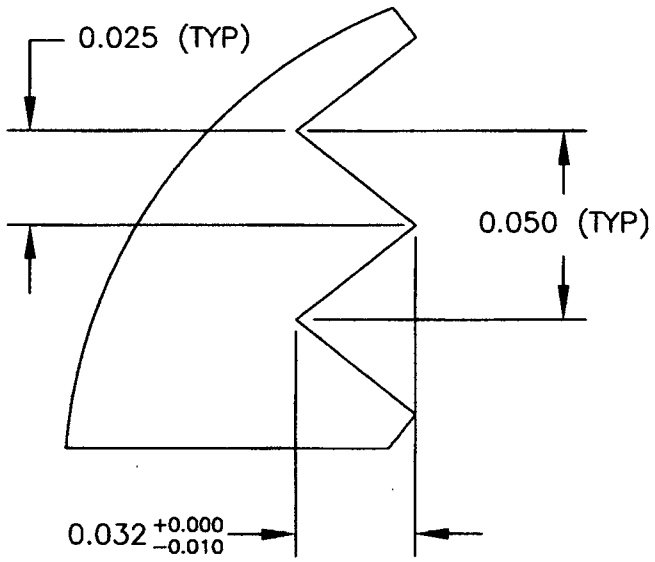




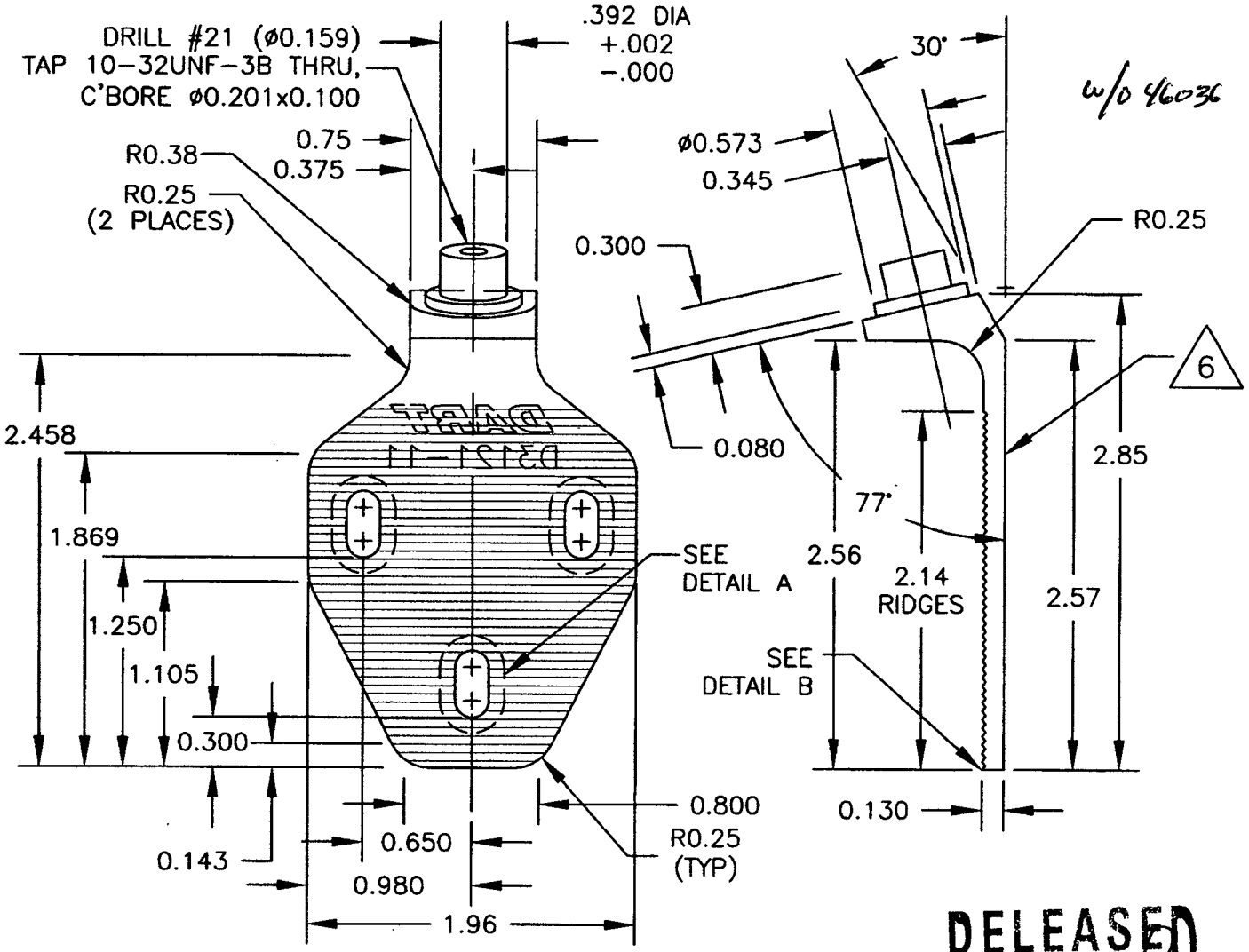
SECTION C–C

RELEASED
07.11.07

DETAIL B:
RIDGE DETAIL
PARTIAL SECTION
SCALE 1:20



DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 4 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:1



RELEASED
07.11.07

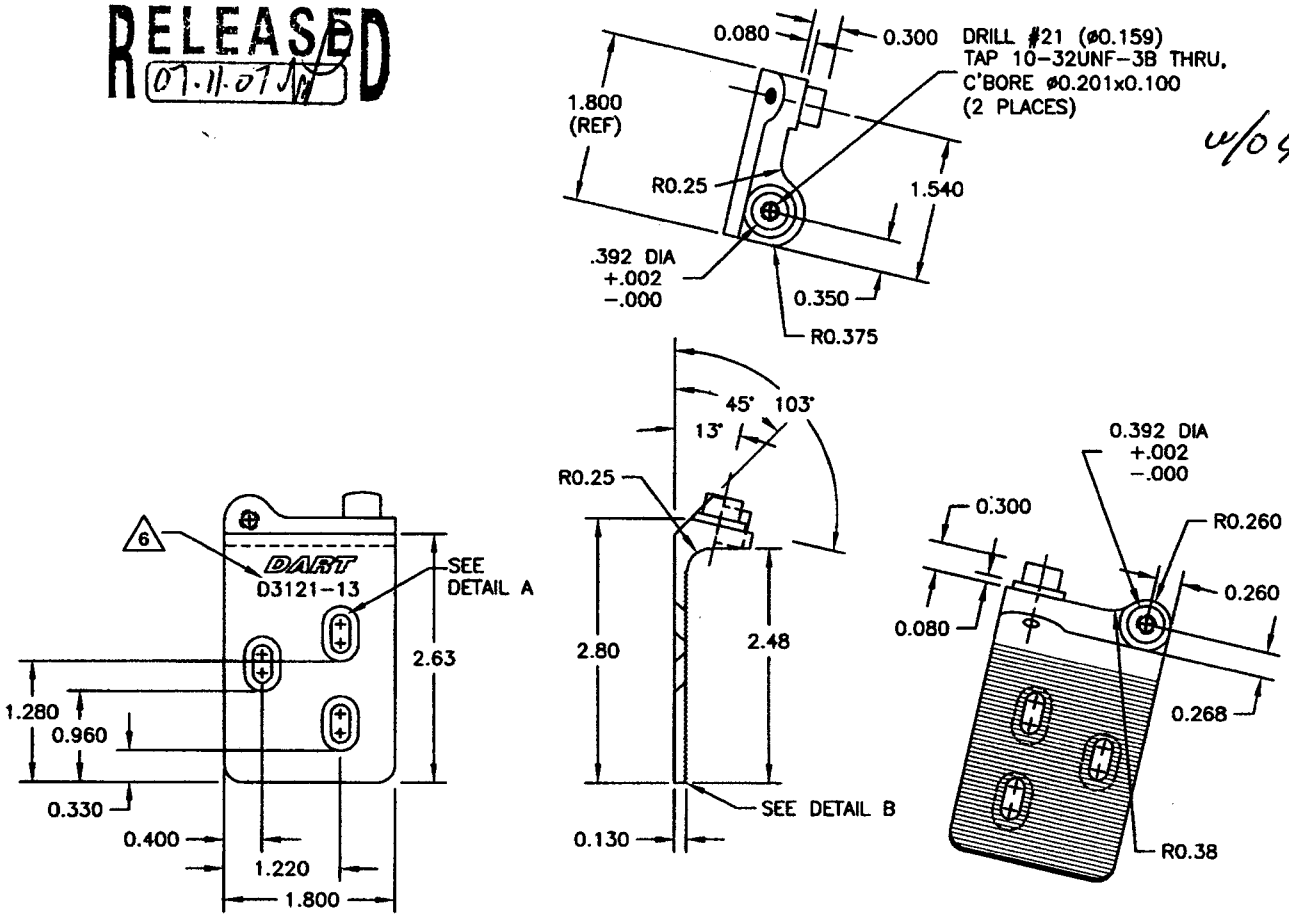
D3121-11 BRACKET

1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
   MIN ULTIMATE TENSILE = 150 ksi
   MIN YIELD TENSILE = 100 ksi
2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
3) ALL DIMENSIONS ARE IN INCHES
4) BREAK ALL SHARP EDGES 0.005 TO 0.015
5) ENGRAVE DART P/N & LOGO AS SHOWN
6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 5 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07

w/o 46036



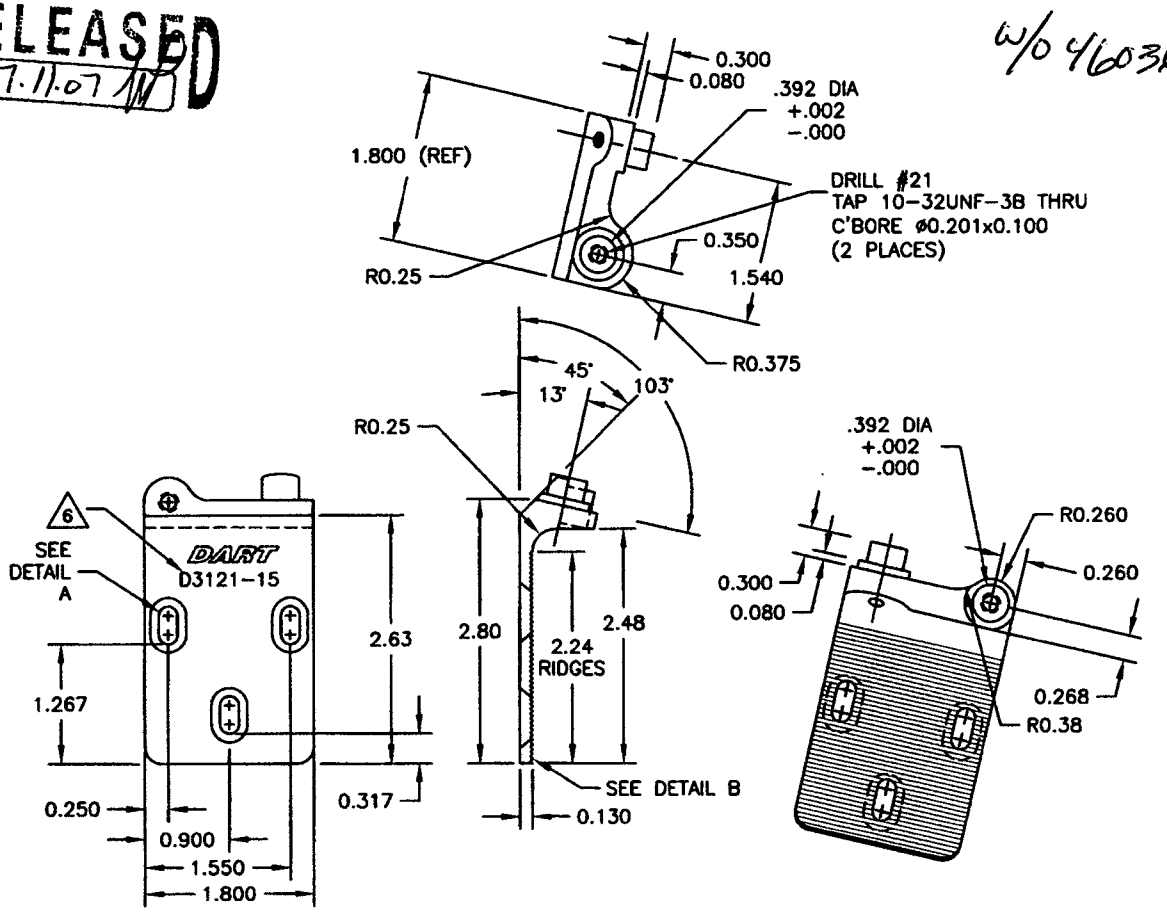
D3121-13 BRACKET (SHOWN)
D3121-14 BRACKET (OPPOSITE)

1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
   MIN ULTIMATE TENSILE STRENGTH = 150 ksi
   MIN YIELD TENSILE STRENGTH = 100 ksi
2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
3) ALL DIMENSIONS ARE IN INCHES
4) BREAK ALL SHARP EDGES 0.005 TO 0.015
5) ENGRAVE DART P/N & LOGO AS SHOWN
6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 6 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07

W/O 46036



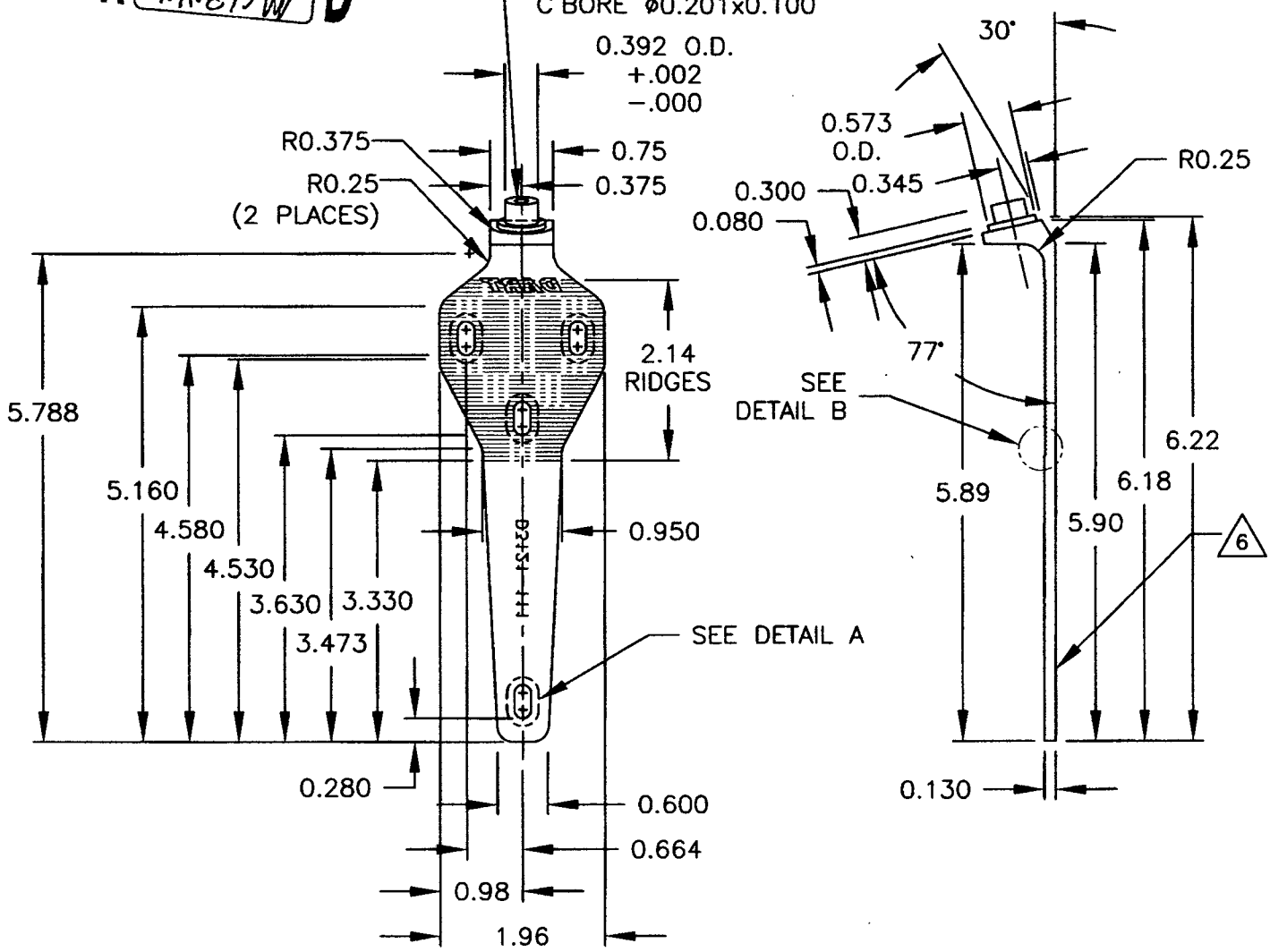
D3121−15 BRACKET (SHOWN)
D3121−16 BRACKET (OPPOSITE)

1) MATERIAL: 17−4 SS PER AMS 5604/5643 (REF DART SPEC. M17−4−B)
   MIN ULTIMATE TENSILE = 150 ksi
   MIN YIELD TENSILE = 100 ksi
2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
3) ALL DIMENSIONS ARE IN INCHES
4) BREAK ALL SHARP EDGES 0.005 TO 0.015
5) ENGRAVE DART P/N AND LOGO AS SHOWN
6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 7 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07 AW

w/o 46036

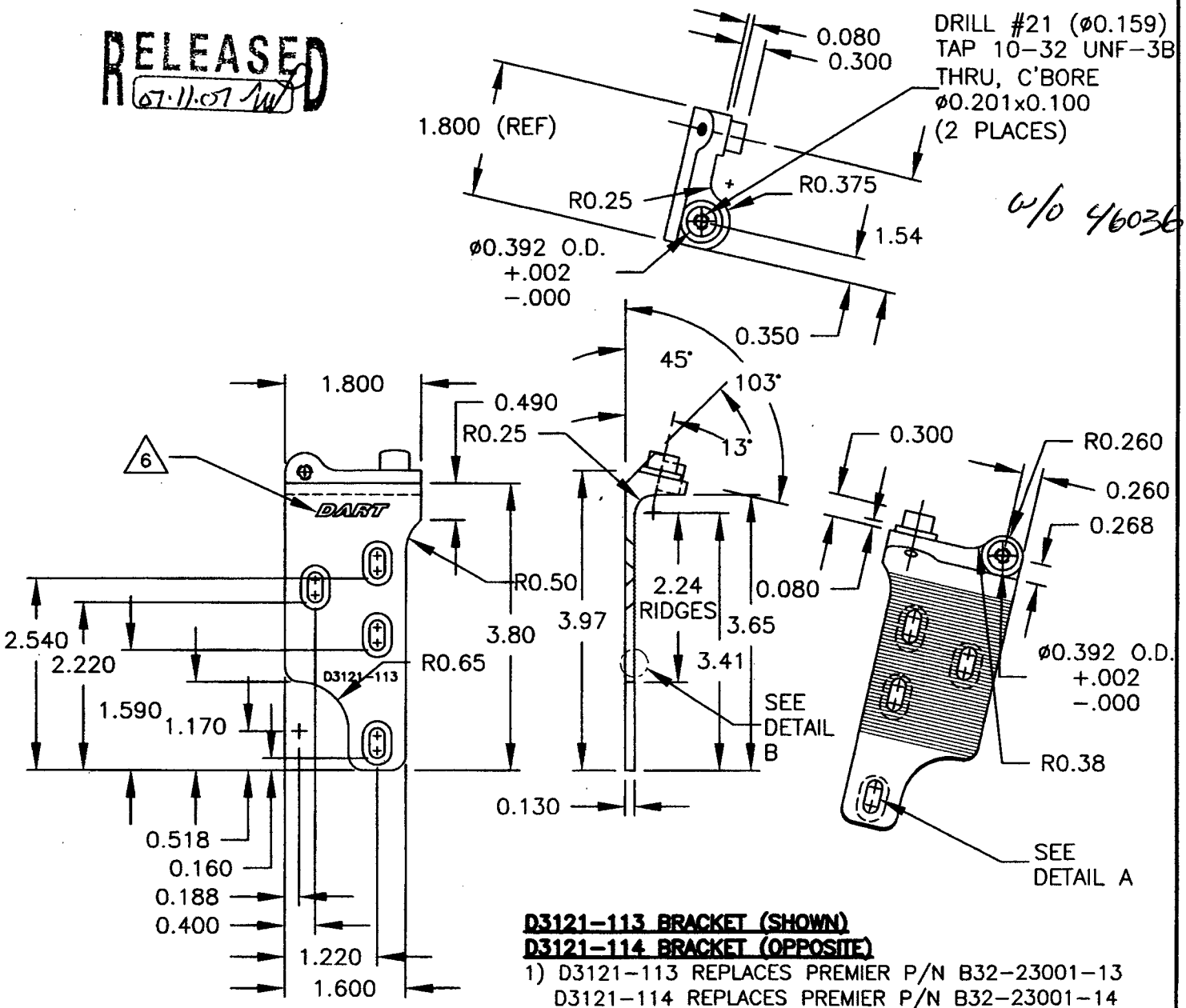


D3121-111 BRACKET

1) REPLACES PREMIER P/N B32-23001-11
2) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
   MIN ULTIMATE TENSILE = 150 ksi
   MIN YIELD TENSILE = 100 ksi
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHEWISE NOTED
4) ALL DIMENSIONS ARE IN INCHES
5) BREAK ALL SHARP EDGES 0.005 TO 0.015
6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 8 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07



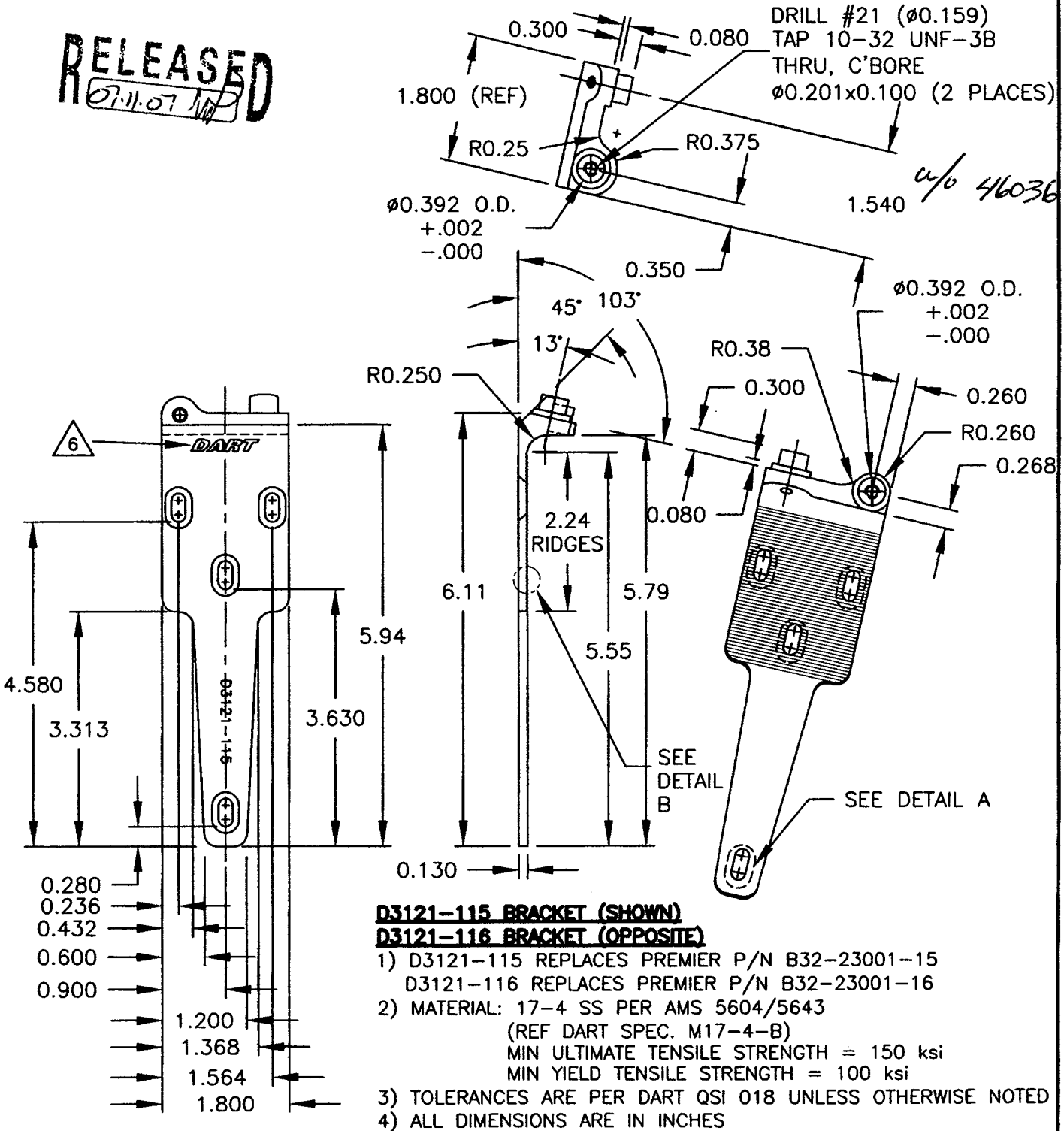
w/o 46036

D3121-113 BRACKET (SHOWN)
D3121-114 BRACKET (OPPOSITE)

1) D3121-113 REPLACES PREMIER P/N B32-23001-13
   D3121-114 REPLACES PREMIER P/N B32-23001-14
2) MATERIAL: 17-4 SS PER AMS 5604/5643
   (REF DART SPEC. M17-4-B)
   MIN ULTIMATE TENSILE STRENGTH = 150 ksi
   MIN YIELD TENSILE STRENGTH = 100 ksi
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) ALL DIMENSIONS ARE IN INCHES
5) BREAK ALL SHARP EDGES 0.005 TO 0.015
6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 9 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED 07.11.07



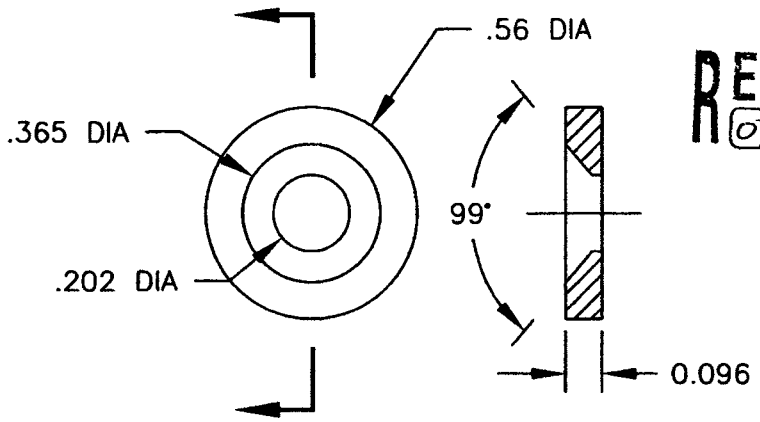
D3121-115 BRACKET (SHOWN)
D3121-116 BRACKET (OPPOSITE)

1) D3121-115 REPLACES PREMIER P/N B32-23001-15
   D3121-116 REPLACES PREMIER P/N B32-23001-16
2) MATERIAL: 17-4 SS PER AMS 5604/5643
   (REF DART SPEC. M17-4-B)
   MIN ULTIMATE TENSILE STRENGTH = 150 ksi
   MIN YIELD TENSILE STRENGTH = 100 ksi
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) ALL DIMENSIONS ARE IN INCHES
5) BREAK ALL SHARP EDGES 0.005 TO 0.015
6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 10 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:1

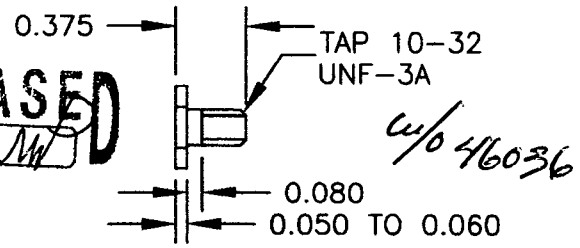
RELEASED 07.11.07 MW

w/o 46036



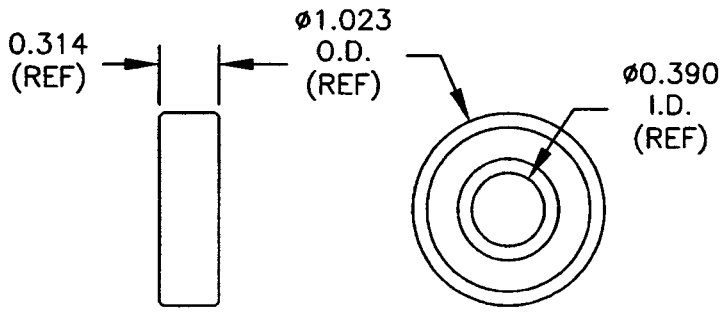
D3121-17 WASHER (SCALE 2:1)

1) REPLACES PREMIER P/N B32-23001-17
2) MATERIAL: AISI 303 SS ROUND BAR, ANNEALED (REF DART SPEC. M303R)
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) ALL DIMENSIONS ARE IN INCHES
5) BREAK ALL SHARP EDGES 0.005 TO 0.015



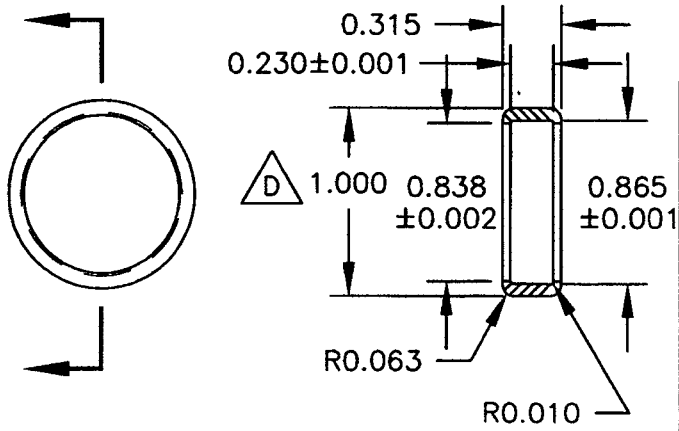
D3121-21 BOLT (SCALE 1:1)

1) MATERIAL: AISI 303 SS HEX, ANNEALED (REF DART SPEC. M303H0.500)
2) FINISH: NONE
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) ALL DIMENSIONS ARE IN INCHES
5) BREAK ALL SHARP EDGES 0.005 TO 0.015



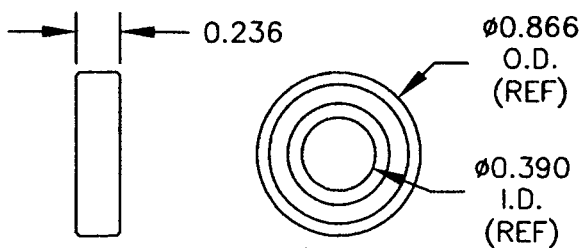
D3121-19 BEARING (SCALE 1:1)

1) POSSIBLE SUPPLIER: KING BEARING P/N 6000-2ZJ/EM
FAFNIR P/N 9100KDD
2) ALL DIMENSIONS ARE IN INCHES



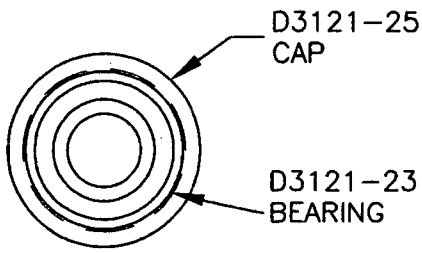
D3121-25 CAP (SCALE 1:1)

1) MATERIAL: DELRIN ROD, ø1.25
(REF DART SPEC. M-DELRIN-R1.250)
2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
3) ALL DIMENSIONS ARE IN INCHES



D3121-23 BEARING (SCALE 1:1)

1) POSSIBLE SUPPLIER: SKF P/N 61900-2Z
OR KML P/N 6900-ZZ
2) ALL DIMENSIONS ARE IN INCHES



D3121-241 BEARING ASSEBLY (SCALE 1:1)